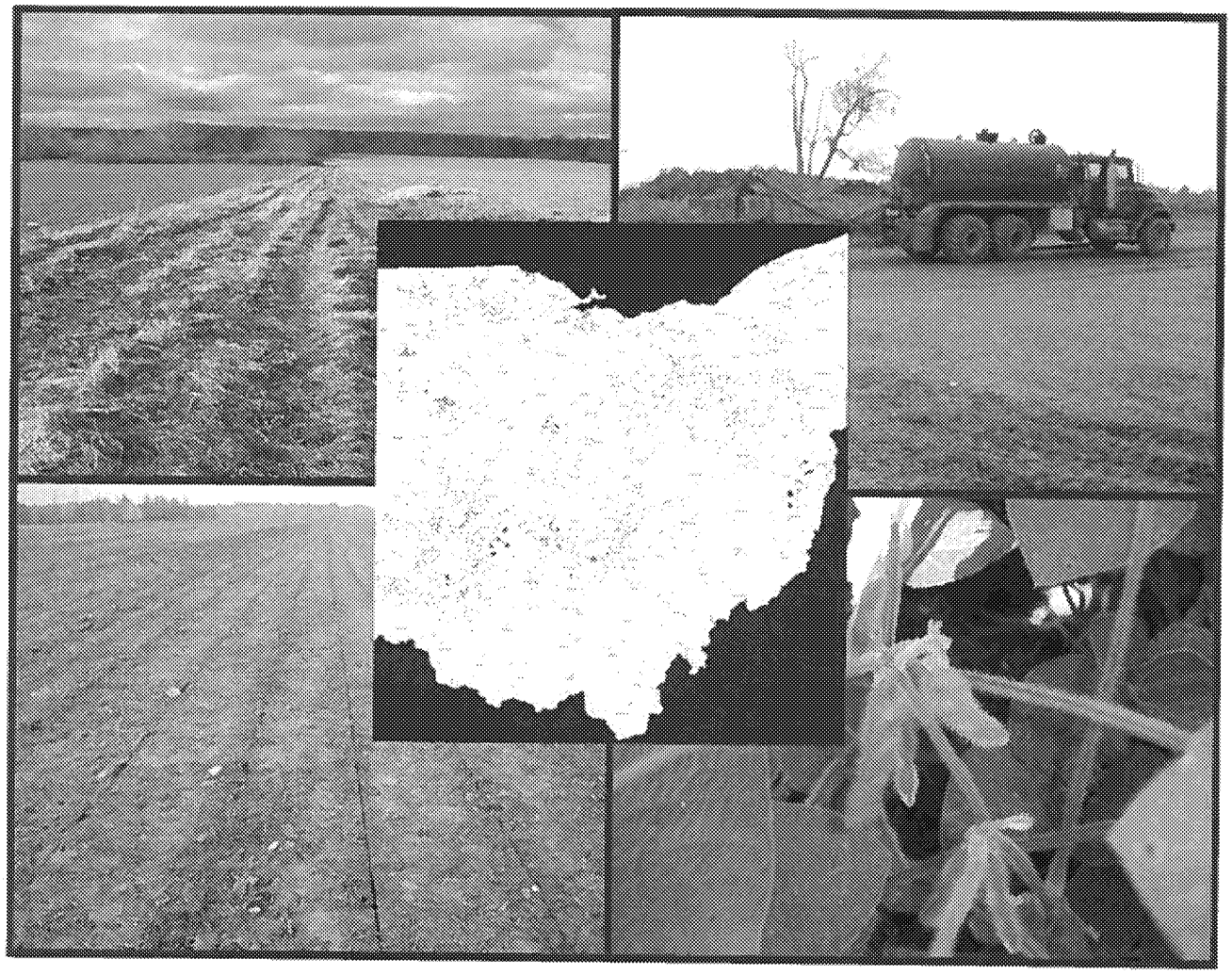
Ohio Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

Division of Surface Water

Application for Authorization: Class B Biosolids Beneficial Use Sites



Division of Surface Water
Application for Authorization: Class B Beneficial Use Sites

Biosolids Treatment Works Information

Treatment works name: Emerald BioEnergy		
Ohio NPDES permit #: 4IN00204*AD		County: Morrow
Mailing address: 461 State Route 61		
City: Marengo	State: OH	Zip: 43334
Operator of record: Taylor Faecher		
Telephone number: (419) 253-5300		
Email address: tfaecher@renergy.com		

Certification Statement

1. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

2. I have read and understand Chapter 3745-40 of the Ohio Administrative Code (OAC) and I agree to beneficially use biosolids in accordance with all applicable beneficial use requirements and restrictions established in Chapter 3745-40 of the Ohio Administrative Code.

3. I agree to only beneficially use biosolids that have satisfied a pathogen reduction alternative and a vector attraction reduction option and have metals concentration below the pollutant ceiling concentrations as established in Chapter 3745-40 of the Ohio Administrative Code.

4. I agree to maintain all applicable records established in Chapter 3745-40 of the Ohio Administrative Code.

Signature

2 / 12 / 18
Date

This form shall be signed by the operator of record for the treatment works, be an original signature, not a copy, and must be less than one year old at the time the application for transfer is submitted to Ohio EPA for review.

Owner Consent for Beneficial Use

[redacted] Exemption 6

Certification Statement

1. I agree to allow biosolids generated by the treatment plant identified on Form BUA-1 to be beneficially used on my property at agronomic rates.

2. I agree to allow federal, state and local regulatory staff access to the beneficial use site for the purposes of inspecting and authorizing the beneficial use site, beneficially using biosolids, and collecting and analyzing samples from the beneficial use site. I reserve the right to ask the above parties for proper identification at any time.

3. I certify that I am holder of legal title to the property described on application form BUA-5, or am authorized by the holder to give consent for the land application of biosolids, and that there are no restrictions to the granting of consent under this form.

WM Thurston owner
Shady Haven Farms LLC
William John Thurston general manager

Signature[2]

2 / 1 / 2018
Date

Original signatures, not copies, must be less than one year old at the time the application for transfer is submitted to Ohio EPA for review.

[1] For purposes of this form, "beneficial use site owner" means the person who owns the legal rights to the proposed beneficial use site.

[2] In the event the owner of the beneficial use site changes, Form BUA-2 must be revised and resubmitted to Ohio EPA.

Beneficial Use Site Operator Consent for Beneficial Use

Exemption 6

Certification Statement

I agree to be responsible for complying with all applicable beneficial use requirements established in Chapter 3745-40 of the Ohio Administrative Code.

Shady Haven Farms LLC

Walter John Shuster general manager

Signature[2]

2 / 1 / 2016

Date

Original signatures, not copies, must be less than one year old at the time the application for transfer is submitted to Ohio EPA for review.

[1] For purposes of this form, "beneficial use site operator" means the person who plants, grows, harvests or otherwise manages feed crops, fiber crops, food crops or pasture land on the proposed beneficial use site.

[2] In the event the operator of the beneficial use site changes, Form BUA-3 must be revised and resubmitted to Ohio EPA.

Division of Surface Water
Application for Authorization: Class B Beneficial Use Sites

Beneficial User Information

Beneficial user[1]: Emerald BioEnergy		
Contact person: Taylor Faecher		
Mailing address: 461 State Route 61		
City: Marengo	State: OH	Zip: 43334
Telephone number: (419) 253-5300		
Email address: tfaecher@renergy.com		

Certification Statement

I agree to be responsible for complying with all applicable beneficial use requirements established in Chapter 3745-40 of the Ohio Administrative Code.

Signature[2] _____ Date 2/12/18

Original signatures, not copies, must be less than one year old at the time the application for transfer is submitted to Ohio EPA for review.

[1] For purposes of this form, the beneficial user means the person who sprays or spreads Class B biosolids onto the surface of the beneficial use site, injects below the surface of the beneficial use site, or incorporates into the soil of the beneficial use site, for the purpose of providing an agronomic benefit.

[2] In the event the beneficial user of the beneficial use site changes, Form BUA-4 must be revised and resubmitted to Ohio EPA.

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: DES-02-11

Beneficial use site location: Southeast corner of Co Rd 229 and Co Rd 245

County: Delaware | **Township**:

Latitude: 40.40578 | **Longitude**: -82.93227

Total acreage proposed for beneficial use: 100

Type of beneficial use to be performed:

Surface application ☐
Injection or immediate incorporation ■

Ground slope percent:

Less than 15%	■	15% to 19.9%	☐
Greater than 20%	☐		

Soil pH (s.u): 6.75

Soil phosphorus (mg/kg): 27.8

Bray Kurtz P1 ☐
Mehlich 3 ■

Bedrock depth (feet): >6.56

Type of crops to be grown:

Crop Type	Expected Yield
Corn	180
Soybeans	55
Wheat	
Pasture	
Hay	
Other:	

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class
BIg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	D	None
BIg1B1	Blount silt loam, ground moraine, 2 to 4 percent slopes	D	None
Gwg1B1	Glynwood silt loam, ground moraine, 2 to 6 percent slopes	D	None
P m	Pewamo silty clay loam, 0 to 1 percent slopes	C / D	None

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	■	Sinkhole/UIC class V drainage	☐
Occupied building	■	Private potable water source	☐
Medical care facility	☐		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes	■ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes	■ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

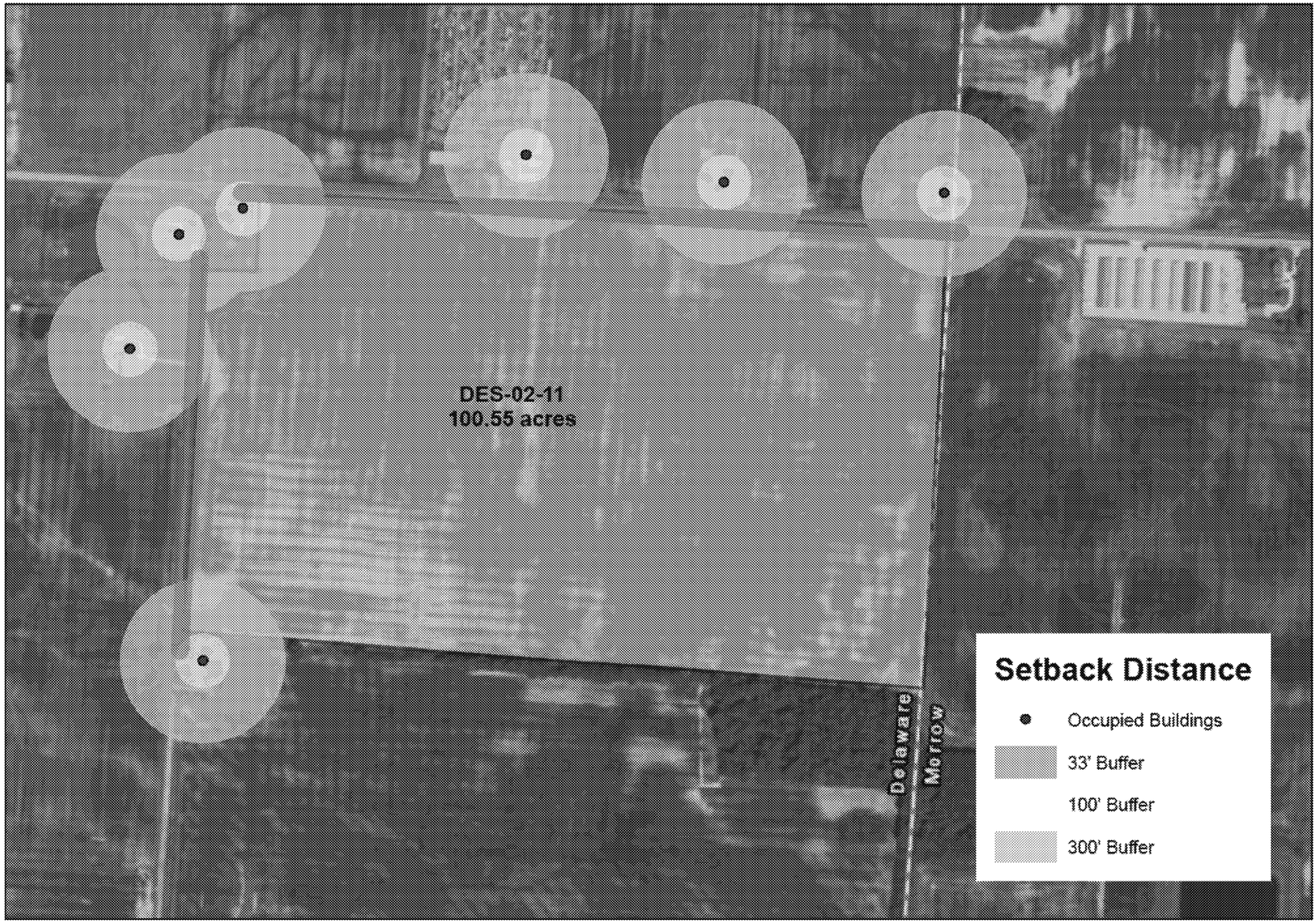
Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following:

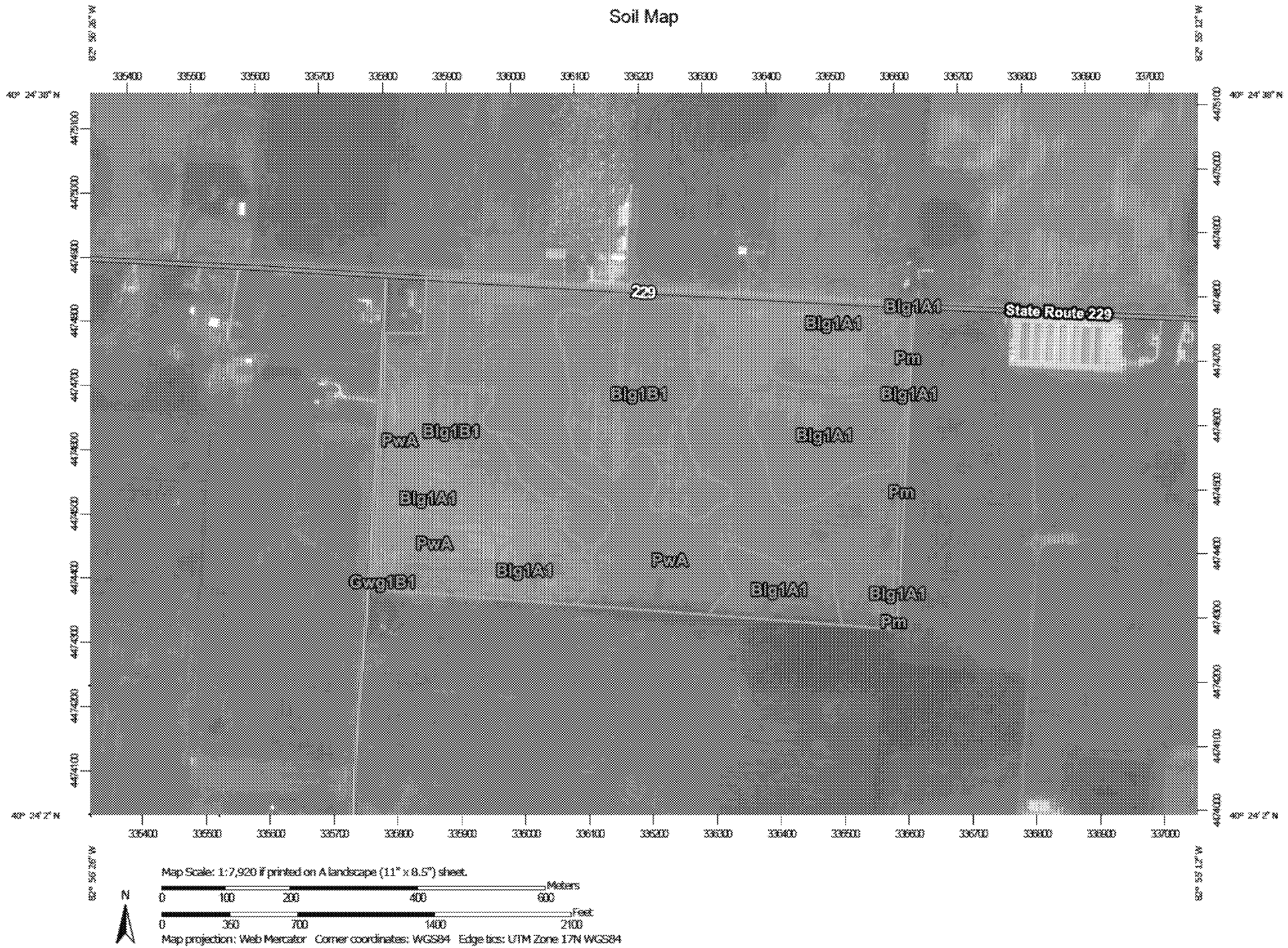
- ☐ A soil map of the proposed beneficial use site;
- ☐ A frequency flood class map of the proposed beneficial use site;
- ☐ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code;
- ☐ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled; and
- ☐ A copy of the most recent soil test results identified in this form.


DES-02-10
DES-02-05
DES-02-01
Cemetery
ckeye Valley East
ementary School
For Sale
For Sale
For Sale
229 Storage
Bill's Auto Services
Thurston
Riser 2
DES-01-04
DES-01-02
DES-01-03
Exemption 6

DES-02-11 Setback Distance



Setback Distance		
DES-02-11		
Total Area: 100.55 acres		
Setbacks:		
	Residence - 300' Buffer	6.96 acres
	Residence - 100' Buffer	0.11 acres
	Surface Waters - 33' Buffer	3.04 acres
	Total Setback Area:	10.11 acres


Soil Map
82° 56' 26" W
82° 55' 12" W
40° 24' 38" N
40° 24' 2" N
335400
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335800
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4474900
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4474600
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4474200
4474100
4474000
229
State Route 229
BlgrlA1
BlgrlB1
Pm
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Map Scale: 1:7,920 if printed on A landscape (11" x 8.5") sheet.
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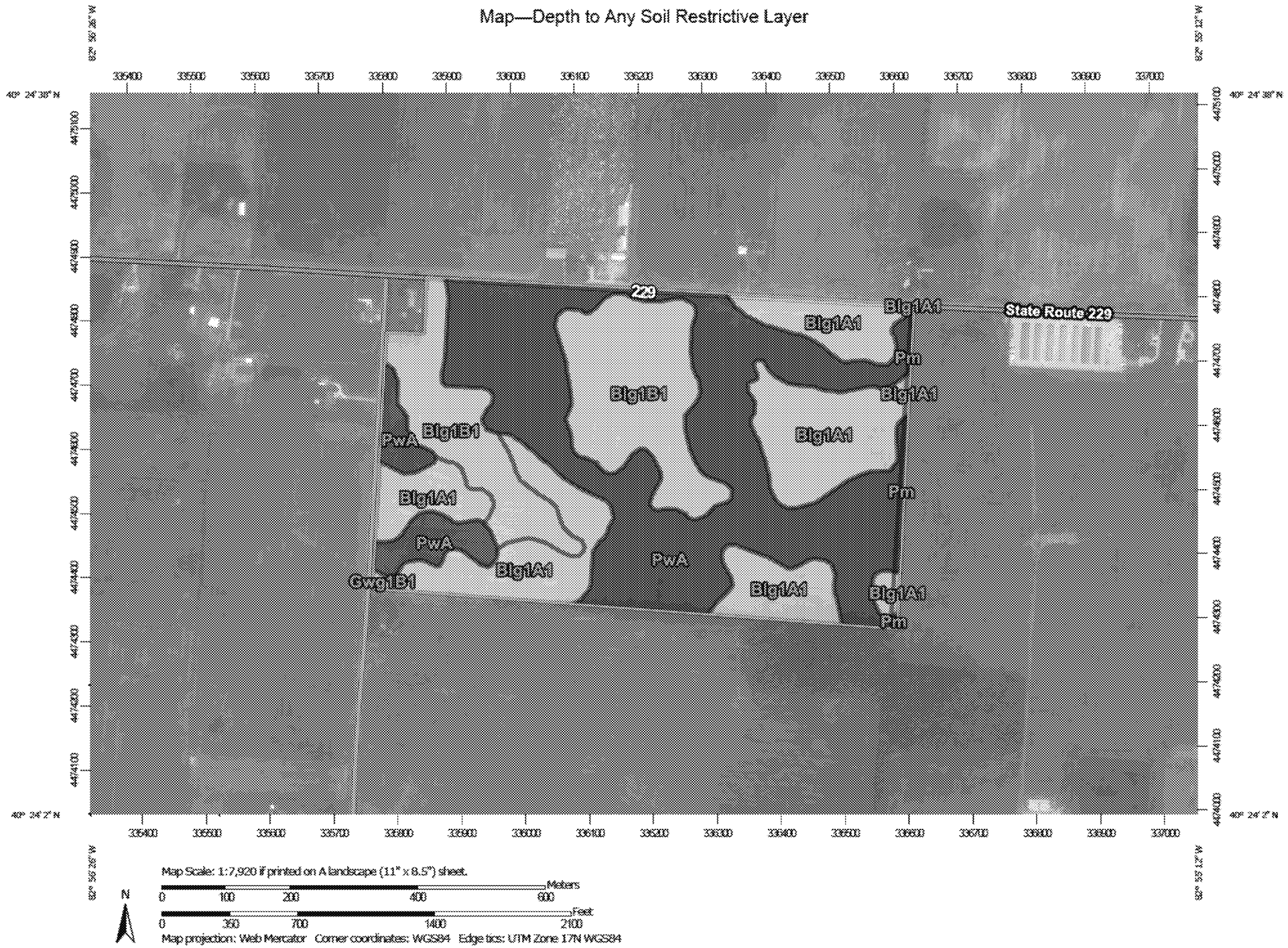
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	29.6	29.4%
Blg1B1	Blount silt loam, ground moraine, 2 to 4 percent slopes	23.6	23.5%
Gwg1B1	Glynwood silt loam, ground moraine, 2 to 6 percent slopes	0.2	0.2%
PwA	Pewamo silty clay loam, 0 to 1 percent slopes	46.2	46.0%
Subtotals for Soil Survey Area		**99.6**	**99.1%**
Totals for Area of Interest		**100.6**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	0.3	0.3%
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	0.6	0.6%
Subtotals for Soil Survey Area		**0.9**	**0.9%**
Totals for Area of Interest		**100.6**	**100.0%**


Map—Depth to Any Soil Restrictive Layer
82° 56' 26" W
82° 55' 12" W
40° 24' 38" N
40° 24' 2" N
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State Route 229
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BlgrlB1
Pm
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Map Scale: 1:7,920 if printed on A landscape (11" x 8.5") sheet.
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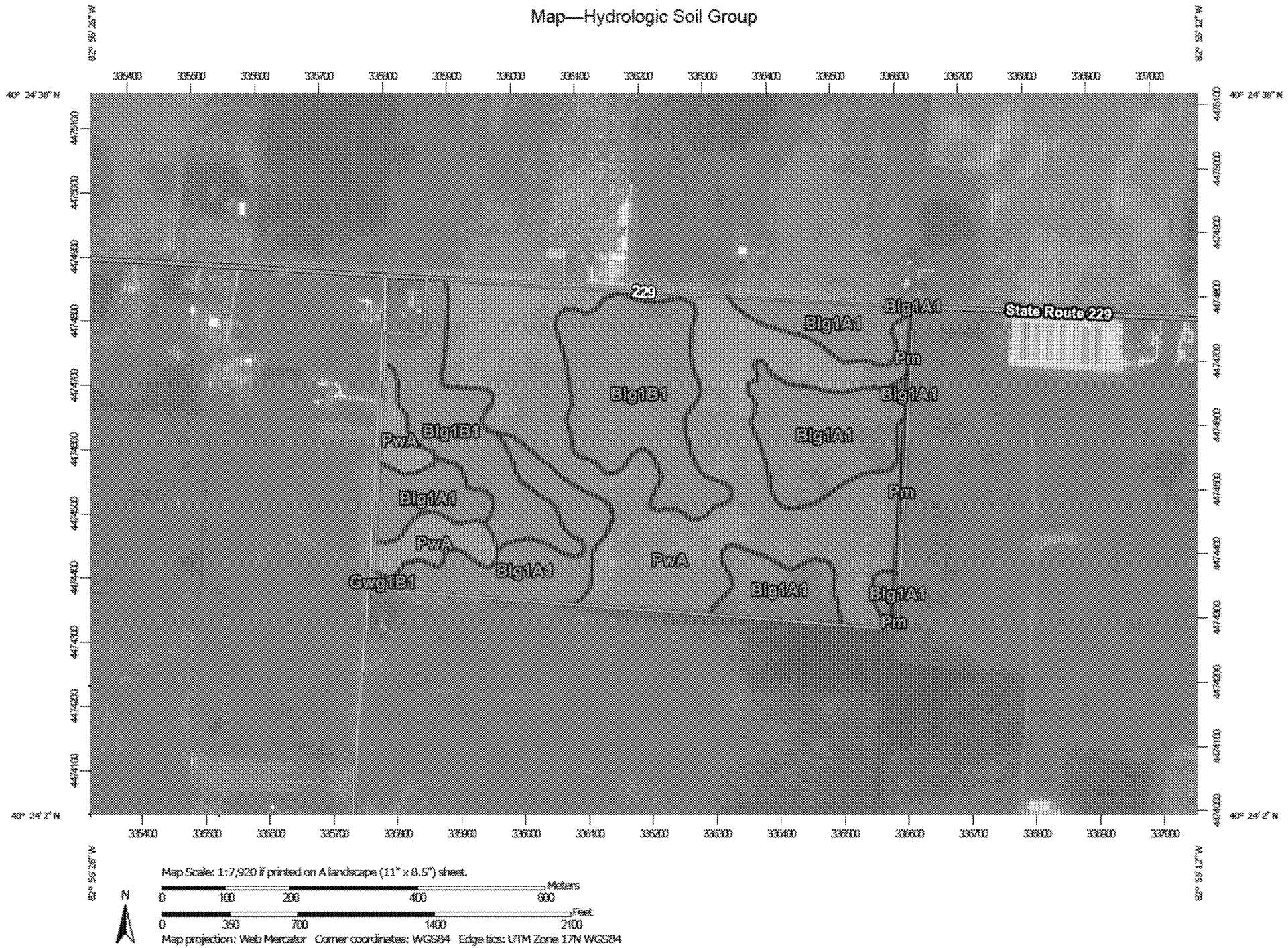
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

Table—Depth to Any Soil Restrictive Layer

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	99	29.6	29.4%
Blg1B1	Blount silt loam, ground moraine, 2 to 4 percent slopes	94	23.6	23.5%
Gwg1B1	Glynwood silt loam, ground moraine, 2 to 6 percent slopes	86	0.2	0.2%
PwA	Pewamo silty clay loam, 0 to 1 percent slopes	>200	46.2	46.0%
Subtotals for Soil Survey Area			**99.6**	**99.1%**
Totals for Area of Interest			**100.6**	**100.0%**

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	99	0.3	0.3%
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	>200	0.6	0.6%
Subtotals for Soil Survey Area			**0.9**	**0.9%**
Totals for Area of Interest			**100.6**	**100.0%**


Map—Hydrologic Soil Group
82° 56' 26" W
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State Route 229
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BlgIB1
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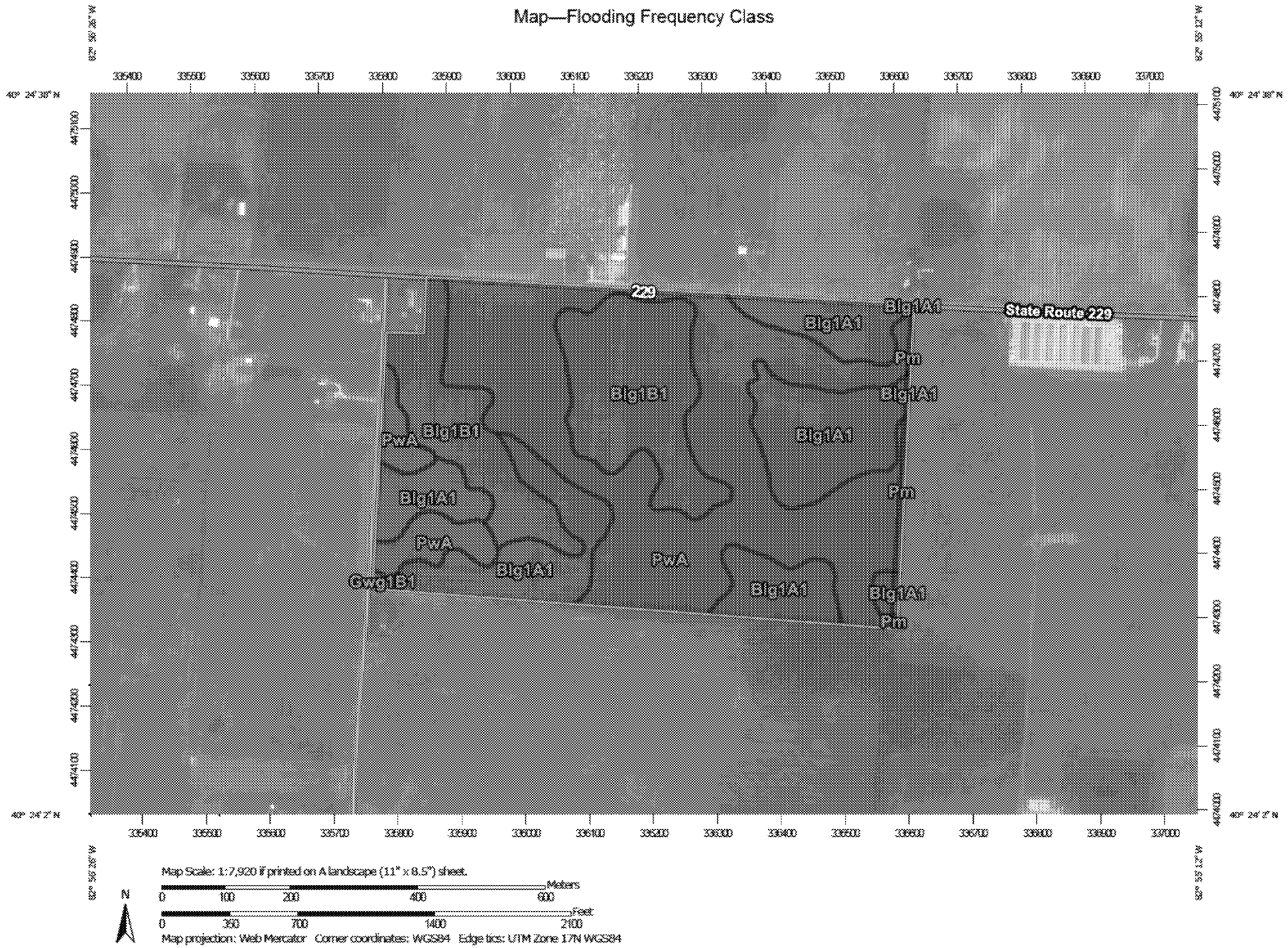
Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	D	29.6	29.4%
Blg1B1	Blount silt loam, ground moraine, 2 to 4 percent slopes	D	23.6	23.5%
Gwg1B1	Glynwood silt loam, ground moraine, 2 to 6 percent slopes	D	0.2	0.2%
PwA	Pewamo silty clay loam, 0 to 1 percent slopes	C/D	46.2	46.0%
Subtotals for Soil Survey Area			**99.6**	**99.1%**
Totals for Area of Interest			**100.6**	**100.0%**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	D	0.3	0.3%
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	C/D	0.6	0.6%
Subtotals for Soil Survey Area			**0.9**	**0.9%**
Totals for Area of Interest			**100.6**	**100.0%**


Map—Flooding Frequency Class
82° 56' 26" W
82° 55' 12" W
40° 24' 38" N
40° 24' 2" N
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Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

Table—Flooding Frequency Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	None	29.6	29.4%
Blg1B1	Blount silt loam, ground moraine, 2 to 4 percent slopes	None	23.6	23.5%
Gwg1B1	Glynwood silt loam, ground moraine, 2 to 6 percent slopes	None	0.2	0.2%
PwA	Pewamo silty clay loam, 0 to 1 percent slopes	None	46.2	46.0%
Subtotals for Soil Survey Area			**99.6**	**99.1%**
Totals for Area of Interest			**100.6**	**100.0%**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	None	0.3	0.3%
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	None	0.6	0.6%
Subtotals for Soil Survey Area			**0.9**	**0.9%**
Totals for Area of Interest			**100.6**	**100.0%**

lb/A

BROOKSIDE LABORATORIES, INC. 58251-22

SOIL AUDIT AND INVENTORY REPORT

Name Ringler Energy City Cardington State OH

Independent Consultant Brookside Consultants of Ohio, Inc. Date 03/05/2018

Sample Location THURSTON 100				1	2	3	4	5
Sample Identification								
Lab Number				0182-1	0183-1	0184-1	0185-1	0186-1
Total Exchange Capacity (ME/100 g)				13.96	19.98	14.60	13.59	16.61
pH (H_2O 1:1)				7.2	6.5	6.3	6.9	6.7
Organic Matter (360°C LOI) %				4.23	5.08	4.12	3.49	5.08
Estimated Nitrogen Release			lb/A	92	100	91	85	100
ANIONS	SOLUBLE SULFUR*		ppm	7	8	7	6	5
ANIONS	PHOSPHORUS	MEHLICH III	lb/A P as P_2O_5	151	151	279	60	73
			ppm of P	33	33	61	13	16
		BRAY II	lb/A P as P_2O_5					
			ppm of P					
		OLSEN	lb/A P as P_2O_5					
			ppm of P					
EXCHANGEABLE CATIONS	CALCIUM*		lb/A	3990	5616	3792	3906	4848
			ppm	1995	2808	1896	1953	2424
	MAGNESIUM*		lb/A	720	670	596	650	594
			ppm	360	335	298	325	297
	POTASSIUM*		lb/A	244	454	236	198	344
			ppm	122	227	118	99	172
	SODIUM*		lb/A	40	40	26	22	22
			ppm	20	20	13	11	11
BASE SATURATION PERCENT								
Calcium			%	71.45	70.27	64.93	71.85	72.97
Magnesium			%	21.49	13.97	17.01	19.93	14.90
Potassium			%	2.24	2.91	2.07	1.87	2.66
Sodium			%	0.62	0.44	0.39	0.35	0.29
Other Bases			%	4.20	4.90	5.10	4.50	4.70
Hydrogen			%	0.00	7.50	10.50	1.50	4.50
EXTRACTABLE MINORS								
Boron* (ppm)				1.00	0.73	0.39	0.35	0.60
Iron* (ppm)				154	176	188	101	160
Manganese* (ppm)				51	23	18	66	11
Copper* (ppm)				2.35	3.82	2.47	1.64	2.60
Zinc* (ppm)				1.77	3.04	1.50	1.31	2.16
Aluminum* (ppm)				665	722	913	639	649
OTHER TESTS	Soluble Salts (mmhos/cm)							
	Chlorides (ppm)							
	Bray I P (ppm)			24	21	44	7	8

* Mehlich III Extractable

lb/A

BROOKSIDE LABORATORIES, INC. 58251-22

SOIL AUDIT AND INVENTORY REPORT

Name Ringler Energy City Cardington State OH

Independent Consultant Brookside Consultants of Ohio, Inc. Date 03/05/2018

Sample Location	THURSTON 100	6					
Sample Identification							
Lab Number		0187-1					
Total Exchange Capacity (ME/100 g)		18.57					
pH (H_2O 1:1)		6.9					
Organic Matter (360°C LOI) %		4.45					
Estimated Nitrogen Release	lb/A	94					
ANIONS	SOLUBLE SULFUR*	ppm	6				
ANIONS / PHOSPHORUS	MEHLICH III	lb/A P as P_2O_5	50				
		ppm of P	11				
	BRAY II	lb/A P as P_2O_5					
		ppm of P					
	OLSEN	lb/A P as P_2O_5					
		ppm of P					
EXCHANGEABLE CATIONS	CALCIUM*	lb/A	5442				
		ppm	2721				
	MAGNESIUM*	lb/A	814				
		ppm	407				
	POTASSIUM*	lb/A	316				
		ppm	158				
	SODIUM*	lb/A	24				
		ppm	12				
BASE SATURATION PERCENT							
Calcium	%		73.26				
Magnesium	%		18.26				
Potassium	%		2.18				
Sodium	%		0.28				
Other Bases	%		4.50				
Hydrogen	%		1.50				
EXTRACTABLE MINORS							
Boron* (ppm)			0.63				
Iron* (ppm)			126				
Manganese* (ppm)			13				
Copper* (ppm)			2.57				
Zinc* (ppm)			1.33				
Aluminum* (ppm)			675				
OTHER TESTS	Soluble Salts (mmhos/cm)						
	Chlorides (ppm)						
	Bray I P (ppm)		4				

* Mehlich III Extractable